THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ANTHONY M. CHIU

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Appeal No. 96-0357
Application 08/200,850[1]

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ON BRIEF

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Before HAIRSTON, MARTIN, and JERRY SMITH, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

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[1] Application for patent filed February 22, 1994. According to applicant, the application is a continuation of Application 07/945,185, filed November 19, 1992.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 8.

The disclosed invention relates to a single contact for a semiconductor device that is formed by an n x n array of flexible conductive balls.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A contact for a semiconductor device, comprising:

a plurality of flexible conductive balls, in an nxn array, n being a whole number greater than 1, each nxn array forming a single contact; and

a flattened area on each conductive ball at which said conductive ball is secured to the semiconductor device contact area.

The references relied on by the examiner are:

Thomas el al. (Thomas)	4,369,458	Jan. 18, 1983
Tsukagoshi et al. (Tsukagoshi)	5,001,542	Mar. 19, 1991

Claims 1 and 5 stand rejected under 35 U.S.C. § 102(b) as

being anticipated by Thomas.

Claims 1 through 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Thomas in view of Tsukagoshi.

Reference is made to the brief and the answer for the respective positions of the appellant and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse all of the rejections.

Turning first to the 35 U.S.C. § 102(b) rejection, the examiner states (Answer, page 3) that:

> In figure 4, Thomas et al. disclose a contact for a semiconductor device including a plurality of compressible, flexible conductive balls (106, 108, 110, 112), in an "nxn" array, n being a whole number greater than 1 (such as 32, see column 6, lines 26-44 and column 10, lines 26-43), each "nxn" forming a single contact (see figure 5); and a "flattened" area on each conductive ball (106, 108, 110, 112) secured to the semiconductor device (80 and 100).

Appellant argues (Brief, page 3) that Thomas "lacks any teachings of using flexible balls to construct a contact for a semiconductor device." We agree. Thomas uses one metallic

cell contact (e.g., cell contact 106) to form a "single" contact, and not "a plurality of flexible conductive balls" as claimed. Thus, the 35 U.S.C. § 102(b) rejection of claims 1 and 5 is reversed.

We agree with the examiner (Answer, page 4) that "Tsukagoshi et al. disclose a compressible conductive ball composition (3) including a flexible elastomer material (8) such as rubber coated with a highly conductive metallic material (9) such as gold." With this teaching in mind, the examiner is of the opinion (Answer, page 4) that "it would have been obvious to a person of ordinary skill in this art at the time the invention was made to use a conductive, flexible ball coated with a highly conductive material in Thomas et al. to obtain a pressure deformable ball free from dispersion of connection resistance and applicable to connection of minute areas of a semiconductor chip such as taught by Tsukagoshi et al." Even if we assume for the sake of argument that the examiner is correct, we are still left with the fact that the single contact 106 in Thomas, albeit now flexible in accordance with the teachings of Tsukagoshi, is still not a "single" contact made of a "plurality of flexible conductive

balls." In summary, the 35 U.S.C. § 103 rejection of claims 1 through 8 is reversed.

DECISION

The decision of the examiner rejecting claims 1 and 5 under 35 U.S.C. § 102(b), and claims 1 through 8 under 35 U.S.C. § 103 is reversed. Accordingly, the decision of the examiner is reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)
JOHN C. MARTIN Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JERRY SMITH Administrative Patent Judge	)

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